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A.D. 1854 . . . . . N° 1199.

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S P E C I F I C A T I O N

OF

LEOPOLD WERTHEIMBER.

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APPARATUS FOR PREVENTING SEA  
SICKNESS.

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L O N D O N :

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**Apparatus for Preventing Sea Sickness.**

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**LETTERS PATENT** to Leopold Wertheimber, of Paris (France), Physician,  
for the Invention of “**IMPROVEMENTS IN APPARATUS FOR PREVENTING SEA  
SICKNESS.**”

Sealed the 28th November 1854, and dated the 30th May 1854.

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**PROVISIONAL SPECIFICATION** left by the said Leopold Wertheimber  
at the Office of the Commissioners of Patents, with his Petition, on the  
30th May 1854.

I, LEOPOLD WERTHEIMBER, of Paris (France), Physician, do hereby declare  
5 the nature of the said Invention for “**IMPROVEMENTS IN APPARATUS FOR  
PREVENTING SEA SICKNESS**” to be as follows:—

Sea sickness arises from a disturbance of the equilibrium of the different  
parts of the human body caused by the motions of the vessel, the upper parts  
of the body being prevented from following at once these motions with the same  
10 impulse as the inferior ones; so much so, that when the vessel rises, those parts  
of the body which are in immediate contact with the vessel experience a feeling  
of pressure; whereas, when the vessel is lowering, they have a sensation as if a  
hollow or disconnection is forming between them and the vessel, and it is in  
this very moment that occurs the unpleasant feeling, this disturbance of the  
15 equality of motion of the upper and lower parts of the body being felt more  
particularly in the lower part of the trunk. By preventing, therefore, this dis-  
turbance and feeling of disconnection, the disagreeable unpleasant sensation, and



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consequent sickness, will be avoided. To carry into effect this principle I interpose between the inferior members of the body and the vessel an apparatus, forming an elastic point of support, such as metal or india-rubber springs, air, or any other suitable elastic yielding medium, which the rising motion of the vessel causes to be compressed, and when the vessel falls it expands. 5

And, secondly, I use an apparatus constructed as above, but acting also by the impetus given to it by any prime mover, other than the person using the apparatus.

And in order that my Invention may be clearly understood, I will describe an apparatus on which the person is to stand upright. It consists of two small 10 boards in a horizontal position, kept at a distance from each other by spiral or other springs, or by any elastic substance, the elasticity of which must be regulated by the weight of the party using it. The person is to stand on the upper board while the lower one rests on the deck or other part of the ship, keeping himself erect by leaning against some support. I also construct on the same 15 plan an elastic mattrass, which permits the person to give the necessary impulses, and similar apparatus also for effecting the same objects while sitting.

**SPECIFICATION** in pursuance of the conditions of the Letters Patent, filed by the said Leopold Wertheimber in the Great Seal Patent Office on 20 the 30th November 1854.

**TO ALL TO WHOM THESE PRESENTS SHALL COME**, I, LEOPOLD WERTHEIMBER, of Paris (France), Physician, send greeting.

**WHEREAS** Her most Excellent Majesty Queen Victoria, by Her Letters Patent, bearing date the Thirtieth day of May, in the year of our Lord 25 One thousand eight hundred and fifty-four, in the seventeenth year of Her reign, did, for Herself, Her heirs and successors, give and grant unto me, the said Leopold Wertheimber, Her special licence that I, the said Leopold Wertheimber, my executors, administrators, and assigns, or such others as I, the said Leopold Wertheimber, my executors, administrators, 30 and assigns, should at any time agree with, and no others, from time to time and at all times thereafter during the term therein expressed, should and lawfully might make, use, exercise, and vend, within the United Kingdom of Great Britain and Ireland, the Channel Islands, and Isle of Man, an Invention for "IMPROVEMENTS IN APPARATUS FOR PREVENTING SEA SICKNESS," 35 upon the condition (amongst others) that I, the said Leopold Wertheimber, by an instrument in writing under my hand and seal, should particularly



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describe and ascertain the nature of the said Invention, and in what manner the same was to be performed, and cause the same to be filed in the Great Seal Patent Office within six calendar months next and immediately after the date of the said Letters Patent.

5     **NOW KNOW YE**, that I, the said Leopold Wertheimber, do hereby declare the nature of my said Invention, and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

10     The complaint or affection known as sea sickness arises from a disturbance of the equilibrium of the body, and is produced by the alternate rise and fall of the vessel, which movements communicate conflicting impressions to the body at the same moment; for example, the effect of the rising motion is not destroyed before the opposite or descending motion commences.

15     The principle of my Invention consists in counteracting the action of the vessel upon the human body, by interposing another medium or base between the ship and the body, which medium or base does not follow the motions of the vessel, but communicate to the body an opposite or another motion, which destroys the impression of the vessel's motion on the body. The apparatus consists, firstly, of a platform fitted in any convenient part of a steam ship, and  
20     attached to the piston rod of an ordinary cylinder; steam is admitted to the cylinder by a four-way cock, which can be opened and shut by various means, and so regulated as to produce an opposite movement to that of the vessel, or a uniform rising and falling motion independent of the vessel. The first may be produced by self-acting apparatus, for example, a water level, or by manual  
25     power, and the second or uniform motion may be produced by the engine. I believe that a steady and uniform motion of the platform, independent of and apart from the motion of the ship, will be found to lessen, if not entirely obviate, the feeling of sea sickness.

30     Secondly, my Invention consists of certain means or apparatus by which a person when standing upon a platform may cause it to rise and fall at will.

And, thirdly, my Invention consists of certain elastic articles, so that a rising and falling motion may be given to the body at the will of the wearer.

I will now describe the apparatus I use for the purpose of counteracting the motion of a steam vessel by means of a moveable platform. A cylinder is fitted  
35     in any convenient part of the ship, the induction passages of which communicate with tubes or pipes carried to the boiler or steam generator. To the upper end of the piston rod of the cylinder a platform is secured; steam is admitted to the cylinder by a four-way cock, which may be opened and shut by a self-acting contrivance, so that, when the ship sinks into the trough of the sea, steam



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is admitted beneath the piston, and the platform is caused to rise; on the contrary, when the vessel rises over the crest of the wave, steam is admitted above the piston and the platform descends, and thus a motion opposite to that of the vessel is obtained, the used steam escaping by the eduction passages into a condenser, or is allowed to pass into the air. 5

Articles of furniture, for example, chairs or couches, may be attached by rods or other suitable means to the platform, so as to relieve persons sitting or lying thereon from the effects of the motion of the vessel.

I will now describe a self-acting apparatus for regulating the action of the four-way cock. It consists of four vessels or cylinders containing water or other fluid; these are placed, one forward, another aft, and the other two amidships upon each side. These vessels are hermetically closed and connected by pipes. The water flows freely from one vessel to another. In the interior of each vessel is a float, having a rod fixed to it which passes through a stuffing-box in the cover of each vessel; the rods are connected to the four-way cock, 15 so that it may be opened and shut as to produce an opposite motion of the platform, &c. to that part of the ship where it is fixed. A similar apparatus to be used without steam is adapted for use on board sailing or other vessels, but the arrangement of the cylinders or vessels is different in this case; they are placed two forward and two at the after part of the ship; they are connected by 20 pipes, two running longitudinally and two across the ship, so that the water may flow freely from one to another. The floats are connected by rods to platforms or articles of furniture. The action of the apparatus is as follows:—

The alternate rising and falling of the vessel will cause the fluid to flow through the pipes or tubes into the lowest cylinders; the influx of fluid 25 will raise the floats, carrying the platforms, and causing them to move in the opposite direction to that of the ship. The pipes or tubes may be fitted with valves, by which the flow of fluid may be regulated, in order to avoid any sudden ascent or descent of the platforms, by placing the cylinders nearer or farther from each other. 30

Another arrangement of the apparatus, where it is required only in one part of the ship, for example, the after part, consists of three cylinders, one placed forward and two at the after part, connected with each other by pipes, as before described. In all the arrangements with the water level, the cylinders may be placed either inside or outside the vessel. In sailing vessels a cylinder may be 35 used, the piston of which is actuated by chloroform, ether, or other similar fluid, as recently introduced. Apparatus may also be arranged so that the individual may be suspended in such manner as to communicate to his body a rising and falling motion.



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The next part of my Invention relates to an apparatus to which a rising and falling motion is communicated by a person seated or standing thereon. It consists of a platform or chair, &c., which is supported by a bracket attached to an upright shaft; this shaft passes through a hollow standard. The upper  
5 part of the shaft is fitted with a rack in which a pinion gears; on the axis of the pinion is fitted a handle; a rising and falling motion is given to the platform by moving the handle to and fro, actuated either by the person seated thereon or by another. The platform may also be moved by a perpendicular shaft or lever attached to a pinion gearing with a toothed rack, or by any other  
10 analogous mechanical arrangement.

Another mode of obtaining an independent motion is, by interposing elastic bodies between the person and the deck; for example, one kind of support may be constructed of two pieces or plates of wood or other material, held together by springs, which keep them a certain distance apart, and thus a considerable  
5 degree of elasticity is given to the upper plate. One of these elastic apparatus is fastened to each foot, giving the wearer the power of elevating or depressing either side of his body. The same arrangement may be applied so as to give great elasticity to spring mattresses, chairs, or couches, or other articles of furniture; but the upper part must be held to the lower only by the springs,  
20 and not fastened at the corners as in the usual construction.

The last part of my Invention consists of apparatus to be attached to the feet, in order to give the wearer the power of counteracting the motion of the vessel. The first of these arrangements consists of two oblong pieces of leather, wood, or other material; these are connected together by a piece of india-  
25 rubber or other air-tight material, so as to form an air-tight chamber; in the side of the chamber is fitted a tube communicating with another reservoir or chamber, which may be attached to the leg. A pair of these elastic sandals are to be fastened to the feet, and when the wearer throws his weight upon one side, the pressure upon that side will cause the gaseous fluid or liquid to  
30 escape into the second chamber, and his foot will descend, while the other foot will ascend in consequence of the weight being taken off the sandal or apparatus upon that side.

A modification of the above may be made with one chamber fitted with valves at the front and hinder parts of the foot, arranged so as to open a large  
35 valve on the inside and a smaller one on the outside, in order that the air may be slowly expelled.

Another arrangement of the foregoing apparatus consists in making the chambers or reservoirs beneath, similar in action to that of a bellows, so that either may be filled with air when a portion of the weight of the body is with-



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drawn, the air acting as an elastic spring, and may be expelled therefrom when the weight of the body is thrown upon either side.

Another modification of the above apparatus consists in making the sandals of pieces of india-rubber tubing or strips of india-rubber, placed either vertically or horizontally, so as to obtain great elasticity. 5

Another arrangement consists of two oval rings or frames of steel; these are supported one above the other by metal rods, which keep them a certain distance apart; the rings are of sufficient size to allow the foot to sink within them. Inside the upper ring is a sole, to which are secured india-rubber rings or straps, which are also fastened to the lower ring; the 10 india-rubber rings pass over rollers attached to the upper metal ring. The same arrangement of rings may be supported by rods jointed in the middle with pieces of india-rubber; the upper part is made smaller than the lower, so that it may freely descend within the lower part.

Having described the nature of my Invention, and the manner in which the 15 same may be carried into effect, I wish it to be understood that I do not confine myself to the precise mechanical arrangements herein described, as the same may be greatly varied without departing from the particular features of the Invention.

And what I claim is, the apparatus herein described, and any other con- 20 structed in a similar manner, for the purpose of putting the human body in such a condition as that it will not participate in the movements of the vessel, by causing an independent movement, often opposite to that of the vessel, thereby neutralizing the effect of the motion of the vessel, and preventing sea sickness. 25

LEOPOLD WERTHEIMBER. (L.S.)

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